PRELIMINARY DETERMINATION
SIP Permit Application No. 15473
March 2005

State of Georgia
Department of Natural Resources
Environmental Protection Division
Air Protection Branch

Stationary Source Permitting Program (SSPP)
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Attachments:

Appendix A: Draft NSR Permit
Appendix B: NSR Permit Application

Summary

The Environmental Protection Division (EPD) has reviewed the Williams Printing Company application to construct and operate an offset lithographic printing facility, and doing so, undergo Non-Attainment Area New Source Review (NAA-NSR).

The proposed Williams Printing facility will be located in Fulton County, one of the original 13 counties designated as non-attainment for ground level ozone in the Atlanta Metro Area under the US EPA 1-hour standard, as well as the new 8-hour ozone standard. As of January 1, 2004, Fulton County is classified as being in severe non-attainment with the 1-hour ozone standard, meaning that the PSD/NSR major source threshold for VOC and NO_x (ground level ozone precursors) has been lowered to 25 tons per year. The Williams Printing facility will be considered a major source with respect to the PSD/NSR regulations, due to the fact that the potential emissions of VOC exceed 25 tons per year and actual VOC emissions from the facility cannot be limited below 25 tons per year.

The EPD review of the data submitted by Williams Printing related to the proposed facility indicates that the project will be in compliance with all applicable state and federal air quality regulations.

It is the preliminary determination of the EPD that the proposal provides for the application of the Lowest Achievable Emission Rate (LAER) for the control of VOC as required by federal regulation 40 CFR 51.165.

To satisfy the offsetting emission reduction credit requirement of 40 CFR 51.165, Williams Printing obtain VOC emission offsets equal to 1.3 times the potential emissions of the proposed facility. This requirement of 40 CFR 51.165 is in place to ensure that there is a net reduction in the non-attainment pollutant of concern (in this case, VOC). Since acquiring the emission reduction credits is required to ensure an improvement in air quality be reducing emissions of non-attainment pollutants, ambient air quality modeling is not required. It has further been determined that the proposal will not cause impairment of visibility or detrimental effects on soils or vegetation. Any air quality impacts produced by project-related growth should be inconsequential.

The Federal Land Manager (FLM) for any Class I area within 200 km of a PSD/NSR major source is required to be notified and given the opportunity to review any application for new construction or modifications. The only Class I area within 200 km of the proposed Williams Printing facility is the Cohutta Wilderness Area. The FLM for this area is Mr. Bruce Bale. Mr. Bale was contacted by the Division regarding the construction and operation of the new Williams Printing facility, but declined the opportunity to review the application submitted by Williams Printing. In declining the opportunity to review the application, Mr. Bale cited the following reasons: the only pollutant of concern that will be emitted from the Williams Printing facility is VOC, the VOC emissions would not be substantial, and that the distance from the facility to the Cohutta Wilderness Area is outside the transport range for the VOC emissions from the facility to reach the Wilderness Area.

The Preliminary Determination indicates that an Air Quality Permit should be issued to Williams Printing Co. for the construction and operation of a heatset and coldset offset lithographic printing facility. Various conditions will be made a part of the permit to ensure and confirm compliance with all applicable air quality regulations. A copy of the draft permit is included in Appendix A.

1.0 Introduction

Williams Printing Company (hereafter know as "Williams"), originally located at 1240 Spring Street, NW, Atlanta (Fulton County), is relocating all printing operations to 3900 N. Commerce Drive in East Point (Fulton County). Williams is being forced to relocate because Georgia DOT has procured the property on Spring Street, through the use of eminent domain, for a road expansion.

Williams was originally permitted in 1990 as a Synthetic Minor source with regard to VOC emissions. One heatset lithographic printing press and five coldset sheetfed lithographic printing presses were operated at the facility located on Spring Street. Several amendments were issued to William's original operating permit in order to relax the original, facility-wide, 21 ton per year VOC emission limit to 25 tons and authorize several coldset printing press replacements. While located at Spring Street and operating mostly coldset lithographic presses, the facility never became a major source in regard to Title V or NSR requirements.

Williams submitted Application No. 15473 to construct and operate two heatset lithographic printing presses, four coldset sheetfed lithographic printing presses, a thermal oxidizer to control VOC and HAP emissions from the heatset printing presses, and other associated equipment at the proposed facility location. The projected actual emissions from the new equipment to be operated at the proposed facility will cause Williams to be a major source in regard to Title V and NSR regulations at startup. An emissions control scheme equaling LAER (Lowest Achievable Emission Rate) will be imposed on the facility and offset emission credits, at a 1.3 to 1 ratio, will have to be procured by Williams prior to startup.

The potential emissions from the proposed facility are as follows:

Table 1-1: Potential Emissions from Proposed Williams Printing Co. Facility

Pollutant	Potential Emissions (tpy)	NAA NSR Major Source Threshold (tpy)	Subject to NSR
PM_{10}	0	N/A	No
PM	0	N/A	No
SO_2	0	N/A	No
NO_x	2.7	25	No
CO	2.3	N/A	No
VOC	409.4	25	Yes
HAP	14.9	N/A	N/A

The potential emissions from the proposed Williams facility were calculated using the methodology presented in the EPA Guideline Series: Control of Volatile Organic Compounds from Lithographic Printing, September 1993 (Draft) and Alternative Control Techniques Document: Offset Lithographic Printing (EPA 453/R-94-054, June 1994).

2.0 Process Description

Printing Operations

Lithography is a planographic method of printing; that is, the printing and nonprinting areas are essentially in the same plane on the surface of a thin metal "lithographic" plate. The distinction between the areas is maintained chemically. When the lithographic plate is made, the image area is rendered oil receptive and water repellant, and the non-image area is rendered water receptive. A fountain containing water based solution is used to dampen the lithographic plate in the water receptive areas.

During printing, ink is transferred first from the ink reservoir, or fountain, to ink rollers, and then onto the lithographic plate. The ink is transferred from the lithographic plate to a rubber-covered blanket cylinder. The blanket cylinder then prints the ink image onto the substrate. Transfer of ink from the lithographic plate to the intermediate blanket cylinder, rather than directly to the substrate, is the offset characteristic of lithographic printing.

Offset lithographic printing can be done using two generic types of ink: heatset inks, which are dried by heat, or non-heatset (coldset) inks, which are not heated. In the heatset ink printing process, the printed substrate passes through a heated dryer to solidify (set) the printing inks by evaporating the ink oils. In the coldset ink process, the inks dry by absorption into the substrate, by oxidation, or by other non-heat processes.

Two types of systems to feed the substrate to the print rolls may be used: (1) web, where paper is fed to the press in a continuous roll and the product is cut to size after the web is printed; and (2) sheet-fed, where individual sheets of paper or metal are fed to the printing press. Offset lithographic printing presses are any of three types: heatset web, coldset web, or coldset sheet-fed.

Williams Printing will operate 2 web-fed heatset offset lithographic printing presses and 4 sheet-fed coldset offset lithographic printing presses at the new facility. The emissions from the heatset presses will be controlled via thermal oxidation using a regenerative thermal oxidizer.

3.0 Review of Applicable Rules and Regulations

3.1 State Rules

Georgia Rule for Air Quality Control (Georgia Rule) 391-3-1-.03(1) requires that any person prior to beginning the construction or modification of any facility which may result in pollution shall obtain a permit for the construction or modification of such facility from the Division upon a determination by the Division that the facility can reasonably be expected to comply with all the provisions of the Act and the rules and regulations promulgated there under. Georgia Rules 391-3-1-.03(8)(c) continues that no permit to construct a new stationary source or modify an existing stationary source (to be located in any area of the State determined and designated by the U.S. EPA Administrator or the Director as not attaining a National Ambient Air Quality Standard or in areas contributing to the ambient air levels of such pollutants in such areas of nonattainment) shall be issued unless such proposed source meets all the requirements for review and for obtaining a permit prescribed in Title I, Part D of the Federal Act [i.e., Plan Requirements for Nonttainment Areas], and Section 391-3-1-.02(8) of the Georgia Rules (i.e., NSR).

Georgia Rules (b) and (e)

Georgia Rule 391-3-1-.02(2)(b), *Visible Emissions*, limits visible emissions from the facility to less than forty (40) percent opacity. The equipment at the facility are anticipated to be in compliance with this opacity limit given that the nature of printing operations is such that it is unlikely that any emissions from the processes would exceed 40 percent.

Georgia Rule 391-3-1-.02(2)(e), *Particulate Emission from Manufacturing Processes*, limits particulate matter emissions per the following formula for the new process equipment: $E = 4.1(P^{0.67})$, where E = Emission rate in pounds per hour and P = Process input rate in tons per hour, for process input weight rates up to and including 30 tons per hour. The equipment at the facility are anticipated to be in compliance with this particulate matter limit given that the nature of printing operations is such that it is unlikely that any emissions from the processes would exceed the allowable particulate matter emission limit calculated using the equation above.

Georgia Rule (w)

Georgia Rule 391-3-1-.02(2)(w), *VOC Emissions from Paper Coating*, limits VOC emissions from facilities engaged in coating paper products. The rule requires that all paper coatings contain less than 2.9 pounds of VOC per gallon of coating, excluding water, delivered to the coating applicator. An alternative solids equivalent limit is given as 4.79 pounds of VOC per gallon of coating solids delivered to the coating applicator. The facility will comply with this comply with this requirement by using paper coatings with a VOC content of 2.5 pounds per gallon of coating or less.

Georgia Rule (ddd)

Georgia Rule 391-3-1-.02(2)(ddd), *VOC Emissions from Offset Lithography*, limits the VOC emissions from facilities engaged in offset lithographic printing. The rule requires that all fountain solutions used at the facility contain VOC in quantities of 8 percent or less, by volume and that a VOC reduction system be installed for all heatset printing presses with a reduction efficiency of 90 percent or greater and an approved capture system. The facility will comply with these requirements through the use of low VOC fountain solutions and thermal oxidizer controlling VOC emissions from the two heatset presses at the facility.

Georgia Rule 391-3-1-.03(8)(c)

This Georgia Rule contains the elements of the Federal New Source Review provisions. This section of the Georgia Rules for Air Quality Control applies to newly constructed or modified existing sources, located in a Non-Attainment Area, whose potential emissions of any regulated pollutant exceed the major source threshold (in this case, 25 tons per year of VOC). This section also applies to existing sources making a modification whose potential emissions exceed the major modification emission thresholds listed in 40 CFR 52.24(f)10. Sources being permitted under these provisions are required to:

a. obtain offsetting emission reduction credits prior to startup

b. comply with the lowest achievable emission rate (LAER) as determined using the RACT/BACT/LAER Clearing House (RBLC) and other authoritative sources

c. certify that all other major stationary sources owned or operated by the Permittee are operating in compliance, or are on a schedule of compliance

d. submit an analysis of alternative sites, sizes, production processes and environmental control techniques for the proposed source to determine whether the benefits of the proposed source significantly outweigh the environmental and social costs imposed as the result of its proposed location, construction, or modification

The State must have, and operate under, an approved State Implementation Plan (SIP) in accordance with Title I, Part D of the Federal Act.

3.2 Federal Rules

NSR – 40 CFR 51.165

The provisions of Statutory Restrictions on New Sources (NSR) in 40 CFR 51.165 have been implemented into Georgia's SIP in Rule 391-3-1-.03(8)(c). For a discussion of these provisions, see the discussion on the previous page regarding Georgia Rule for Air Quality Control 391-3-1-.03(8)(c).

4.0 CONTROL TECHNOLOGY REVIEW – Printing Operations

Lowest Achievable Emission Rate (LAER)

The Lowest Achievable Emission Rate (LAER) is defined, according to 40 CFR 51.165(a)(1)(xiii), as the most stringent emissions limitation which is achieved in practice by such class or category of stationary sources. This limitation, when applied, means the lowest achievable emissions rate for the new or modified emissions units within or stationary source. In no event shall the application of the term permit a proposed new or modified stationary source to emit any pollutant in excess of the amount allowable under an applicable new source standard of performance.

A LAER determination, unlike a BACT determination, is not a "top-down" analysis, exploring technical, energy, environmental, and economic considerations, finally settling on an emissions control scheme that strikes a balance between all considerations. A LAER determination simply looks at the most stringent emission rate that can be achieved by the source, regardless of other considerations. LAER can be achieved through raw material changes, process modifications, and/or add-on controls.

A LAER determination is not limited to only technologies or emission limits achieved in practice by another, similar source. The determination can include SIP emission limits not yet complied with by other sources and other technology not currently used in practice by that source category, if it is transferable. An exception to this is that the cost of implementing and maintaining a certain level of control cannot prohibit the construction or operation of new major sources within that source category. Also, if a facility can satisfactorily demonstrate that a SIP limitation or control technology is technically infeasible for its process, those limitations or technologies may be excluded from the LAER determination.

Volatile Organic Compounds

VOC emissions are emitted from the printing operations due to the use of inks, fountain solutions, and cleaning solvents. The VOC control methodology for the proposed Williams facility will be implemented in two parts: thermal oxidation of the VOC emissions from the two heatset presses and low VOC inks and solvent usage.

The VOC emissions from the heatset presses will be controlled using a combination of a 20,000 cfm rated L&E Model TR1293C regenerative thermal oxidizer and inks, solvents, etc. with low VOC content/vapor pressure. The drying units of the two heatset presses, operated at negative pressure relative to the surrounding pressroom, will capture 100 percent of the VOC emitted from the inks, 70 percent of the VOC emitted from the fountain solution, and 40 percent of the VOC emitted from the automatically applied cleaning solvent (blanket wash) will be captured during the drying process. VOC emissions will be drawn from the drying units of the two heatset presses (the point of origin for most of the VOC emissions from the heatset presses) and routed to one of the oxidizer lobes for preheating. The gas passes into the

combustion zone where VOCs are destroyed. The remaining hot gases pass through the exhaust lobe of the oxidizer and heat up a ceramic material. The gases then pass on to the stack through a diverter valve. After a specified period of time, the diverter valve switches so that the incoming gas is routed through the former exhaust lobe where the hot ceramic material preheats the incoming gas. The gas then passes through the combustion zone, and through the former inlet lobe, transferring heat to the ceramic material there. After the specified period of time, the diverter valve switches to the original lobe; and the cycle is repeated.

The low VOC content materials usage will further aid in reducing VOC emissions from the facility. The fountain solution is required to have no more than 5 percent VOC by volume. The blanket and roller washes are required to have a vapor pressure no more than 10 mm Hg at 20 ºC or 2.5 lb VOC/gal of wash as applied. Other cleaning solvents used on the heatset presses are required to have a vapor pressure no more than 25 mm Hg at 20 ºC or 2.5 lb VOC/gal of solvent as applied.

The VOC emissions from the coldset presses will be controlled through the use of low VOC content inks and low VOC content/vapor pressure fountain solutions and cleaning solvents. 95 percent of any VOC applied to the paper substrate and 40 percent of the cleaning solvent, applied manually, are assumed to be retained, while the rest of the VOC used (i.e. from fountain solutions, coatings, and automatic cleaning solvents) will be emitted. In searching the RACT/BACT/LAER Clearinghouse (RBLC) and the California Air Resources Board (CARB) BACT database, it was determined that add-on controls have never been required for coldset offset lithographic printing presses. This is due in large part to the high substrate retention of VOC from the inks used on the presses, a heated drying system is not used to drive off the VOC from the ink and coatings to set them, the VOC content of the inks, coatings, fountain solution, and cleaning solvents is low, and the VOC emissions are not vented in a concentrated stream. Therefore, capturing and destroying or recovering the VOC emissions from the coldset presses is not technically or economically feasible.

The low VOC content requirements for the materials used on the coldset presses are as follows: Inks, coatings, and varnishes are required to have no more than 2.5 lb VOC/gal of ink, coating, or varnish, the fountain solution is required to have no more than 5 percent VOC by volume as applied, blanket and roller washes are required to have a vapor pressure no more than 10 mm Hg at 20 ºC or 2.5 lb VOC/gal of wash as applied, and other cleaning solvents used on the coldset presses are required to have a vapor pressure no more than 25 mm Hg at 20 ºC or 2.5 lb VOC/gal of solvent as applied.

The destruction efficiency specified for the L&E Model TR1293C oxidizer to be used at the Williams facility is 97 percent. The best-controlled similar source is located in California (Quebecor World Great Western Publishing). Quebecor uses a 17,000 dscfm regenerative thermal oxidizer and capture system rated at 99.5 percent overall control efficiency, with the oxidizer operating at a reported 99.9 percent destruction efficiency. At this control efficiency, with a VOC inlet load to the oxidizer of 836 lb/hr, 4.18 lb VOC/hr is emitted from the oxidizer. The oxidizer at the Williams facility will only emit 1.41 lb VOC/hr at a VOC inlet load of 46.9 lb VOC/hr. Given

the fact that Williams will be emitting less than the best-controlled similar source on a lb/hr basis, the Division has determined that the use of a regenerative thermal oxidizer and the proposed emissions and VOC content limits constitute LAER for heatset lithographic printing.

The low VOC content/vapor pressure specifications for the inks, fountain solutions, cleaning solvents, etc. suggested by Williams correspond with other BACT/LAER requirements for similar sources. Therefore, the Division has determined that the proposed emissions and VOC content limits constitute LAER for coldset lithographic printing.

A comparison of other BACT/LAER determinations on lithographic printing presses is listed below.

Determination Source	**Facility Name**	**Limits**	**BACT/ LAER**	**Williams' determination as stringent?[1]**
RBLC: WI-0084	Quad/Graphics – Sussex	97.5% efficiency No VOC contents specified 13.5 tpy VOC	BACT	Yes
RBLC: IL-0070	Quebecor Chicago	97% efficiency VOC content/vapor pressure requirements for solvents and fountain solutions	LAER	Yes
CARB	Madison-Graham Colorgraphics, Inc.	VOC content/vapor pressure requirements for solvents and fountain solutions. 95% overall control efficiency for capture and control device.	BACT	Yes
CARB	South Coast Printing	91% control efficiency for control device.	BACT	Yes
SCAQMD	Quebecor World Great Western Publishing	VOC content/vapor pressure requirements for solvents and fountain solutions. 95% overall control efficiency for capture and control device.	BACT	Yes
CA-0806 (cold-set)	Pacific Southwest Container	VOC content/vapor pressure requirements for inks, solvents and fountain solutions for both high-end and low-end printing.	LAER	Yes

5.0 Ambient Air Quality Review (Offset Credits)

Emission Offset Credits

Under the provisions of 40 CFR 51.165, offsetting emission reduction credits must be procured by the source prior to commencing operation in lieu of performing an ambient air quality analysis (only applicable for emissions of VOC or NO_x). The purpose of the emission offset credits is to ensure that the sum total of the emissions of the non-attainment pollutant, including the emissions from the proposed facility, are less than the sum total of the non-attainment pollutant emissions before the proposed facility begins operation, so as to represent (when considered together with other air pollution control measures legally enforced in such areas or regions) reasonable further progress toward attaining the National Ambient Air Quality Standard for which the area is in non-attainment.

The US EPA has established ratios relating the amount of emission offset credits that must be obtained to the amount of allowable non-attainment pollutant emissions from a major source or modification for the five non-attainment area classifications. The classifications and ratios correspond as follows: marginal (1.1:1), moderate (1.15:1), serious (1.2:1), severe (1.3:1), and extreme (1.5:1). The 13-county Atlanta 1-hour Ozone Non-Attainment Area is designated severe, meaning, for every 1 ton of allowable emissions from a proposed major source, 1.3 tons of emission offset credits must be procured.

Williams is currently in possession of 19.5 tons of emissions offset credits due to the shutdown of its former Atlanta facility, located on Spring Street. This value is based on the prior two years of emission data from the facility. Since Williams has requested a 44.3 ton per year VOC emission limit, at the 1.3:1 offset ratio, a total of 57.6 tons per year of VOC offset credits need to be obtained. An additional 40 tons of offset credits have been procured by Williams, in the form of ERC-0038 to meet the 1.3:1 offset ratio in order to have enough offset credits to receive the requested 44.3 tons per year VOC emission limit.

Air Toxics

There are no applicable NAAQS or specific Georgia ambient air standards for the individual toxics emitted by the facility. Impacts from each of the pollutants to be emitted from the proposed facility have been analyzed using the EPD Guidance for Ambient Impact Assessment of Toxic Air Pollutant Emissions (referred to as the Georgia Air Toxics Guideline; Version June 21, 1998). The Georgia Air Toxics Guideline is a guide for estimating the environmental impact of sources of toxic air pollutants. A toxic air pollutant is defined as any substance which may have an adverse effect on public health, excluding any specific substance that is covered by a State or Federal ambient air quality standard. The SCREEN3 or ISCST3 computer dispersion models are commonly used to conservatively predict the maximum 24-hour average or annual ground level concentration (referred to as MGLC) for each pollutant in question. The worst-case HAP and toxic emissions are used to perform the toxic guideline assessment. Each MGLC is compared to its respective acceptable ambient concentration (referred to as AAC).

The basis for calculation of the AAC comes from the pollutant toxicity rating systems described in the Georgia Air Toxics Guideline.

The facility has performed a toxic impact assessment as specified in Appendix B of their SIP Application. The Division has reviewed this impact assessment as well as attached data and has concluded that the facility passes the Georgia Toxic Guidelines for the proposed facility.

Class I Visibility Analysis

The nearest PSD Class I area is the Cohutta Wilderness area, which is approximately 130 km to the north-northeast of the facility. The facility is not undergoing an NSR review for NO_x, SO_2, and PM, therefore, a Class I area significant impact assessment is not required.

6.0 Additional Impact Analysis

NSR requires an analysis of impairment to visibility, soils, and vegetation that will occur as a result of the emissions from the proposed Williams facility and an analysis of the air quality impact projected for the area as a result of general commercial, residential, industrial, and other growth associated with this project. Other impact analysis requirements may also be imposed on a permit applicant under local, State or Federal laws which are outside the NSR permitting process (such as Georgia's Toxic Guidelines).

Visibility

Visibility impairment is any perceptible change in visibility (visual range, contrast, atmospheric color, etc.) from that which would have existed under natural conditions. Poor visibility is caused when fine solid or liquid particles, usually in the form of nitrogen oxides or sulfur oxides, absorb or scatter light. This light scattering or absorption actually reduces the amount of light received from viewed objects and scatters ambient light in the line of sight. This scattered ambient light appears as haze.

Another form of visibility impairment in the form of plume blight occurs when particles and light-absorbing gases are confined to a single elevated haze layer or coherent plume. Plume blight, a white, gray, or brown plume clearly visible against a background sky or other dark object, usually can be traced to a single source such as a smoke stack.

Detailed Level I and Level II visibility screening analyses were not required to be conducted because the facility did not trigger a NSR review for NO_x, SO_2, or PM emissions. No significant adverse impacts on visibility are expected to result from the operation of the proposed Williams facility.

Soils and Vegetation

No sensitive soil types are known to exist within the area of the project. Moreover, the areas of maximum impact are generally cultivated or forested and demonstrate no obvious sensitivity to industrial air emissions.

Alternative Site Analysis

The Williams facility is centrally located in the Atlanta area to serve southeastern and mid-Atlantic region, with most of its customer base located in Atlanta. Locating the Williams facility outside of the Atlanta area would result in job losses for residents in Atlanta (Williams employs 232 trade and crafts people), loss of tax revenue from the facility, discontinued use of local contractors and services, and erosion of the company's customer base.

The Williams facility is being forced to relocate because of a road expansion on Spring Street. The Georgia DOT has procured the Williams property on Spring Street through the use of eminent domain. In order for Williams to maintain its

customer base, keep its employees, contribute tax revenue, and enhance the economy of Atlanta, it must locate at the site proposed in this determination.

Alternative Process Analysis

Most of the equipment to be used in the proposed Williams facility will be coming from the previous facility on Spring Street. The equipment that will be added at the proposed facility will be of the same type as the equipment already owned by Williams. The size of the printing equipment is not the determining factor for emissions of VOC from the facility, the inks, coatings, fountain solutions, etc. are. Since Williams prints products to customer specifications, process material usages are limited to customer requirements for their products. As such, alternative process equipment, and to a great extent process material alternatives, are not available. Williams proposed limits on VOC content/vapor pressure of materials used on the coldset and heatset printing presses and opted to use an abatement/capture system to control the bulk of the emissions from the heatset presses. Since a pollution prevention plan is not available in the form of an alternative process, the aforementioned process material requirements and abatement/capture system are the best means to control VOC emissions from the facility.

Growth

The effects to ambient air quality due to growth associated with the construction of the proposed Williams facility are expected to be insignificant. The Williams facility is moving approximately 15 miles from its former location into an existing structure. The workforce from the previous facility will continue to work at the proposed facility, therefore, there will be no residential growth associated with the proposed facility. Since the proposed facility will not change the commercial, residential, and industrial demographics of the area, a growth impact analysis is not warranted and was not performed.

7.0 Testing and Monitoring Requirements

Testing

Williams will be required to conduct testing on the regenerative thermal oxidizer. The reason for this testing is to determine the destruction efficiency of the oxidizer. The oxidizer destruction efficiency will yield an overall control efficiency for the emission control system. Given the fact that if the heatset press dryers are operated at negative pressure compared to the pressroom, it is assumed to have 100 percent capture efficiency. The US EPA has determined that due to the design aspects of the heatset press dryers, as long as a vacuum is maintained in the unit, it will act as a total enclosure; therefore, no performance testing is required to determine the capture efficiency of the heatset press dryers.

In order to determine the overall control efficiency and other information, the following tests will be conducted:

a. Method 1: Determination of sample and velocity transverses for stationary sources;

b. Method 2: Determination of stack gas velocity and volumetric flow rate (Type S Pitot Tube);

c. Method 3: Gas analysis for the determination of dry molecular weight;

d. Method 4: Determination of moisture content in stack gases;

e. Method 24: Determination of volatile matter content, water content, density, volume solids, and weight solids of surface coatings

f. Method 25: Determination of total gaseous nonmethane organic emissions as carbon

g. Method 311: Analysis of Hazardous Air Pollutant Compounds in Paints and Coatings by Direct Injection into a Gas Chromatograph

Williams will conduct these tests after receipt of a construction and operating permit to establish the initial control efficiency of the emission control system. Williams is free to retest the emission control system in order to establish a new control efficiency as long as the control efficiency meets the requirements set forth in the construction and operating permit.

Monitoring

Thermal Oxidizer

The monitoring requirement for the regenerative thermal oxidizer will consist of installing and operating a temperature-monitoring device to measure the combustion zone temperature of the oxidizer. Since combustion zone temperature is measured as a surrogate to an actual measurement of the destruction efficiency, this monitoring parameter will demonstrate, with reasonable assurance, that the oxidizer is operating at the required destruction efficiency.

Heatset Press Dryers

The monitoring requirements for the heatset press dryers will consist of installing a gas pressure monitoring device at the duct plenum before the fan to the inlet of the oxidizer. This monitoring will demonstrate that the dryers are at a negative pressure in relation to the press room. The heatset press dryers, when operated at a negative pressure to the surrounding area, capture 100 percent of the VOC emissions from the dryers.

Compliant Materials for Heatset and Coldset Presses

Usage of materials complying with the low VOC/vapor pressure requirements of the Permit will be certified by obtaining and maintaining copies of MSDS or CPDS sheets, indicating the VOC content/vapor pressure for each ink, coatings, fountain solution, and cleaning solvent used at the facility.

8.0 Explanation of Draft Permit Conditions

Condition No. 2.1 limits the yearly VOC emissions from the facility to less than 44.3 tons. This Condition is part of the LAER determination required under 40 CFR 51.165 and 391-3-1-.03(8)c.

Condition No. 2.2 limits the opacity of any visible emissions from the facility to 40 percent or less.

Condition No. 2.3 limits particulate matter emissions from the facility using an equation based on process input weight rate.

Condition No. 2.4 lists the VOC content/vapor pressure limits applied to the fountain solutions, washes, and cleaning solvents for the heatset presses and the inks, coatings, varnishes, fountain solutions, washes, and cleaning solvents for the coldset presses. This Condition is part of the LAER determination required under 40 CFR 51.165 and 391-3-1-.03(8)c. Rules (w) and (ddd) were subsumed by this Condition due to the fact that the VOC content/vapor pressure limits in this Condition are more stringent than those required by Rules (w) or (ddd).

Condition No. 4.1 requires that the regenerative thermal oxidizer TO1 be operated at a temperature proven to result in a 97 percent destruction for all non-methane VOC entering the oxidizer at all times printing is taking place on the heatset presses W1 and W2. This Condition also provides the criteria for establishing a new operating temperature for the oxidizer should the facility chose to do so.

Condition No. 4.2 requires the heatset press dryers to be operated at a negative pressure so that 100 percent of the VOC emitted during the drying process is captured. This Condition is part of the LAER determination required under 40 CFR 51.165 and 391-3-1-.03(8)c.

Condition No. 5.1 requires a monitor to be installed to measure and record the combustion zone temperature of the regenerative thermal oxidizer on a continuous basis. The monitor is to have an accuracy of ±2 °F.

Condition No. 5.2 requires a monitor to be installed to measure the vacuum in the ductwork routing VOC emissions from the heatset press dryers to the oxidizer.

Condition No. 6.3 lists the tests methods that can be used by the facility during performance tests to demonstrate compliance with the requirements of Sections 2 and 4.

Condition No. 6.4 requires that a destruction efficiency test for the regenerative thermal oxidizer be performed no later than 120 days after the initial startup of the unit.

Condition No. 7.7 requires that the MSDS, certified product data sheet (CPDS), or onsite formulation data for each material listed in Condition No. 2.4 be kept, showing the VOC content or vapor pressure of each material.

Condition No. 7.8 requires that monthly usage records for all VOC-containing materials in use at the facility be kept. This Condition also gives the method for subtracting the VOC content of any material disposed of as waste from the total emissions from the facility.

Condition No. 7.9 requires that the monthly VOC emissions from the entire facility be calculated. The Division is to be notified if the monthly VOC emissions from the entire facility exceed 3.69 tons.

Condition No. 7.10 requires that the 12-month rolling total VOC emissions from the facility be calculated. The Division is to be notified if the 12-month rolling total VOC emissions from the entire facility equal or exceed 44.3 tons.

Condition No. 7.11 lists the equations used to calculate the monthly VOC emissions from the facility, taking into account the capture efficiency of the heatset press dryers and the destruction efficiency of the oxidizer.

Condition No. 7.12 requires that monthly usage records for all HAP-containing materials in use at the facility be kept. This Condition also gives the method for subtracting the HAP content of any material disposed of as waste from the total emissions from the facility.

Condition No. 7.13 requires that the monthly individual and combined HAP emissions from the entire facility be calculated. While Williams has indicated that this source will be a true minor source of HAPs, this condition will ensure that HAP emissions do not exceed the major source thresholds.

Condition No. 7.14 lists the equations used to calculate the monthly individual and combined HAP emissions from the facility, taking into account the capture efficiency of the heatset press dryers and the destruction efficiency of the oxidizer.